2. (Amended) A method for suppressing the immune system of an animal, comprising administering to the animal an amount of a *hedgehog* agonist effective to suppress the immune system.

4. (Amended) The method of claim 1, 2 or 31, wherein the *hedgehog* agonist is a polypeptide which includes a *hedgehog* amino acid sequence at least 80% identical to at least one of SEQ ID Nos. 10-18, or any fragment thereof that binds to a *patched* polypeptide.

6. (Amended) The method of claim 4, wherein the hedgehog amino acid sequence is at least 90 percent identical to at least one of SEQ ID Nos. 10-18 or any fragment thereof that binds to a *patched* polypeptide.

7. (Amended) The method of claim 4, wherein the hedgehog amino acid sequence is encodable by a nucleic acid which hybridizes under stringent conditions of 6.0 x sodium chloride/sodium citrate (SSC) at about 45 °C, followed by a wash of 2.0 x SSC at 50 °C, to at least one of SEQ ID Nos. 1-9.

8. (Amended) The method of claim 4, wherein the hedgehog amino acid sequence is a vertebrate hedgehog polypeptide.

9. (Amended) The method of claim 4, wherein the polypeptide includes at least a 50 amino acid extracellular portion of a vertebrate hedgehog polypeptide.

10. (Amended) The method of claim 4, wherein the polypeptide includes at least an extracellular portion of a vertebrate hedgehog polypeptide corresponding to residues 24-194 of SEQ ID No:15.

11. (Amended) The method of claim 4, wherein the polypeptide is modified with one or more lipophilic moieties.

12. (Amended) The method of claim 11, wherein the polypeptide is modified with one or more sterol moieties.

13. The method of claim 12, wherein the sterol moiety is cholesterol.

C5

14. (Amended) The method of claim 11, wherein the polypeptide is modified with one or more fatty acid moieties.

15. (Amended) The method of claim 14, wherein each fatty acid moiety is independently selected from myristoyl, palmitoyl, stearoyl, and arachidoyl.

16. (Amended) The method of claim 11, wherein the polypeptide is modified with one or more aromatic hydrocarbons.

17. The method of claim 16, wherein each aromatic hydrocarbon is independently selected from benzene, perylene, phenanthrene, anthracene, naphthalene, pyrene, chrysene, and naphthacene.

C6

18. (Amended) The method of claim 11, wherein the polypeptide is modified one or more times with a C7 - C30 alkyl or cycloalkyl.

C7

21. (Amended) The method of claim 2 or 31, wherein the hedgehog agonist binds to *patched* and mimics *hedgehog* signal transduction by altering the localization, protein-protein binding, and/or enzymatic activity of an intracellular protein involved in hedgehog signaling.

C8

29. (Amended) The method of claim 2, wherein suppressing the immune system of an animal comprises inhibiting T lymphocyte maturation.

Please add the following new claims:

31. (New) A method for suppressing T cell maturation, comprising contacting the T cell an amount of a *hedgehog* agonist effective to suppress T cell maturation.

32. (New) The method of claim 2 or 31, wherein the hedgehog agonist alters the level of expression of a *hedgehog* protein, a *patched* protein, or a protein involved in hedgehog signaling.

The claims presented above incorporate changes as indicated by the marked-up versions below.

1. (Amended) A method for modulating the immune function of an animal, comprising administering to the animal an ~~therapeutic~~ amount of a *hedgehog* ~~or *ptc* therapeutic~~ agonist or antagonist effective to suppress or enhance the immune function, respectively.

2. (Amended) A method for suppressing the immune system of an animal, comprising administering to the animal an ~~effective~~ amount of a *hedgehog* ~~protein, or~~ agonist ~~thereof~~ effective to suppress the immune system.

4. (Amended) The method of claims ~~1-3~~ 1, 2 or 31, wherein the *hedgehog* ~~therapeutic~~ agonist is a polypeptide which includes a *hedgehog* amino acid sequence ~~which is~~ at least 80% identical ~~or homologous to an amino acid sequence of any~~ to at least one of SEQ ID Nos. 10-18, or any fragment thereof that binds to a *patched* polypeptide.

6. (Amended) The method of claim 4, wherein the hedgehog amino acid sequence is at least ~~80~~ 90 percent identical to ~~an amino acid sequence of any~~ at least one of SEQ ID Nos. 10-18 or any fragment thereof that binds to a *patched* polypeptide.

7. (Amended) The method of claim 4, wherein the hedgehog amino acid sequence is encodable by a nucleic acid which hybridizes under stringent conditions of 6.0 x sodium chloride/sodium citrate (SSC) at about 45 °C, followed by a wash of 2.0 x SSC at 50 °C, to ~~any~~ at least one of SEQ ID Nos. 1-9.

8. (Amended) The method of claim 4, wherein the hedgehog amino acid sequence is ~~of~~ a vertebrate hedgehog ~~protein~~ polypeptide.

9. (Amended) The method of claim 4, wherein the polypeptide includes at least a 50 amino acid extracellular portion of a vertebrate hedgehog ~~protein~~ polypeptide.

10. (Amended) The method of claim 4, wherein the polypeptide includes at least an extracellular portion of a vertebrate hedgehog ~~protein~~ polypeptide corresponding to residues 24-194 of SEQ ID No:15.

11. (Amended) The method of claim 4, wherein the ~~hedgehog~~ polypeptide is modified with one or more lipophilic moieties.

12. (Amended) The method of claim 11, wherein the ~~hedgehog~~ polypeptide is modified with one or more sterol moieties.

14. (Amended) The method of claim 11, wherein the ~~hedgehog~~ polypeptide is modified with one or more fatty acid moieties.

15. (Amended) The method of claim 14, wherein each fatty acid moiety is independently selected from ~~the group consisting of~~ myristoyl, palmitoyl, stearoyl, and arachidoyl.

16. (Amended) The method of claim 11, wherein the ~~hedgehog~~ polypeptide is modified with one or more aromatic hydrocarbons.

18. (Amended) The method of claim 11, wherein the ~~hedgehog~~ polypeptide is modified one or more times with a C7 - C30 alkyl or cycloalkyl.

21. (Amended) The method of claim ~~1~~ 2 or 31, wherein the ~~*ptc* therapeutic~~ hedgehog agonist binds to *patched* and mimics *hedgehog* ~~mediated *patched*~~ signal transduction by altering the localization, protein-protein binding, and/or enzymatic activity of an intracellular protein involved in hedgehog signaling.

29. (Amended) ~~A~~ The method of claim 2, wherein suppressing the immune ~~function~~ system of an animal comprises inhibiting T lymphocyte maturation.

REMARKS

Claims 1-2, 4, and 6-32 constitute the pending claims in the present application. Claims 1-2, 4-18, 21, and 29 were elected with traverse. Claims 3, 19-20, 22-28, and 30 are withdrawn from consideration as being drawn to a non-elected invention. Applicants will cancel these claims upon indication of allowable subject matter in the elected invention. Claim 5 has been deleted without prejudice. Claims 1-2, 4, 6-12, 14-16, 18, 21, and 29 have been amended. Claims 31-32 have been added. Support for the subject matter of these claims is found throughout the specification. No new matter has been added. Applicants respectfully request reconsideration in